Re-abstracting Project:
A continuous quality control process.

July 2002

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INTRODUCTION

The North Dakota Cancer Registry (NDCR) performed a breast reabstracting audit on a random sample of breast cancers diagnosed between the years of 1997 and 2000. The audit was performed to assess case completeness and quality of data submitted from registry hospital's and non-registry facilities in North Dakota. The purpose of the NDCR reabstracting audit is to estimate the item-specific level of accuracy of data submitted, identify systemic problems in collecting registry data, to identify areas where coding or interpretation of coding rules can be targeted for training, and to provide a mechanism for feed back to registrars. The NDCR will perform a yearly reabstracting audit. The reabstracting site will change from year to year.

METHODOLOGY

A random sample of 99 cancer records were selected from all newly diagnosed breast cancers submitted by all reporting facilities with diagnosis dates ranging between 1997 and 2001. Seventeen data entry fields were identified to be reabstracted in the project. The seventeen data entry fields reabstracted is described in the table below.

Field	NAACCR Data Item Number
Last Name	2230
First Name	2240
SSN	2320
Sex	220
Laterality	410
Dx State	80
Birth Date	240
Race	160
Dx County	90
Dx City	70
Dx Zip	100
Summary Stage 1977	760
Primary Site	400
Sequence Central	380
Morphology ICDO-2	419
Grade	440
Dx Date	390
Rx Date Initial	1270
Dx Address	2330
Middle Name	2250

The randomly selected cancer records represent a composite, or combined, record of information reported from several sources (e.g., hospitals, pathology laboratories, etc.). Therefore, when performing the reabstracting task, source documents from multiple facilities may have been used to reabstract a given cancer record.

After reabastrating the cancer record, the reabstracted record was compared with the record in the NDCR database. Field level agreements were identified. Each field level disagreement was explored to identify patterns of why a disagreement between the reabastracted record and the original records occurred. This reconciliation process included examining information submitted to the NDCR database, reviewing a copy of the patient record received by the NDCR, and reviewing the information abstracted into the reabstracting audit form. The NDCR contacted the facility that housed the original record to discuss any discrepancies.

QUANTITATIVE RESULTS

A total of 99 cancer reports were reabastracted. The majority of re-abstracted fields in these records (8 out of 17) had agreement rates over 90 percent. These fields included sex, laterality, date of diagnosis, birth date, race, and the resident city, county, and zip code at the time of cancer diagnosis. Four of the 17 fields had agreement rates below 80 percent; these included date of diagnosis, date of initial treatment, resident street address at the time of diagnosis, and middle name/initial. The table below shows the agreement rates by field.

Reabstracting Results Summary	
Records Reabstracted: 99	
Field	Agreement %
Sex	95.96%
Laterality	95.96%
Dx State	95.96%
Birth Date	94.95%
Race	94.95%
Dx County	92.93%
Dx City	91.92%
Dx Zip	91.92%
Summary Stage 1977	87.88%
Primary Site	84.85%
Sequence Central	82.83%
Morphology ICDO-2	82.83%
Grade	80.81%
Dx Date	79.80%
Rx Date Initial	75.76%
Dx Address	37.37%
Middle Name	23.23%

For some fields, the disagreements can be explained by sub-set information. For the reabstracted date fields (i.e., birth date, diagnosis date, initial treatment date), the disagreements were likely due to the day value of the date rather than the month or year values. Disagreements for the primary site and address at diagnosis fields have similar explanations. Almost all disagreements for the primary site field were due to sub-sited disagreements (e.g., C50.6 versus C50.9). The address at diagnosis field disagreements might be explained by missing apartment numbers and or use of abbreviations (e.g., St. versus Street and Blvd. Versus Boulevard).

Overall, fields used for basic cancer incidence surveillance and analysis had agreement rates over 80 percent.

DISCUSSION OF RESULTS

The North Dakota Cancer Registry (NDCR) performed a reabstracting audit on breast cancer cases diagnosed during the years of 1997 through 2001. A random sample of 99 cases was selected from all newly diagnosed breast cancers submitted by all reporting facilities. The 17 data entry fields re-abstracted did not include names of patients.

The reconciliation process included examining the information submitted to the NDCR database, reviewing a copy of the patient record received by the NDCR, and reviewing the information abstracted into the reabstracting audit form. The NDCR staff contacted the facility that housed the original record to discuss any discrepancies. After the reconciliation process, several fields contained no discrepancies: behavior, birth date, social security number, sex, race, laterality, city, state, county and zip code. The remaining fields had 36 discrepancies

Prior to reconciliation, the sequence number data entry field had 13 discrepancies with three discrepancies identified after reconciliation. Two discrepancies occurred because a patient had more that one cancer, and this medical information was not documented in the patient's medical record. The third discrepancy was due to oversight.

The diagnosis date contained 16 discrepancies prior to reconciliation; and after the process, four remained. None of the changes resulted in a change to the diagnosis date greater than one month. Sometimes the mammogram report was not available when the case was being abstracted but was added to the chart at a later date. In one situation, the mammogram report was performed at another facility and was not available to the registrar.

Primary subsite was often difficult to determine. There were 10 discrepancies prior to reconciliation and five following the reconciliation process. If the mammogram report was not specific and a needle localization of the mass was not performed, the subsite was less likely to be stated in the report. The operative report should state the location of the mass, but the surgeon did not always dictate the subsite. If the surgeon had completed the staging form, the subsite should have been noted there. Staging forms were not found on all records. Additionally, some cases had conflicting subsites dictated in the various reports.

Morphology showed 11 conflicts prior to reconciliation and four following the process. Wording of the pathology report was responsible for three of these discrepancies. The remaining discrepancy was because no specimen was obtained, and the primary physician and an oncologist diagnosed different morphologies.

An unknown grade was abstracted in some cases when a grade actually was available in the record. Another grade was recorded as grade 3 when it should have been recorded as an unknown grade. The field contained 14 discrepancies before reconciliation and 12 after. Two cases would have been able to use the Scaff Bloom-Richardson grading system.

Stage at diagnosis had eight discrepancies prior to reconciliation and two after. One case had a stage recorded without documentation. In the other case, the pathology report stated infiltrating in situ with micro invasion.

Wording of the address at diagnosis field led to 60 discrepancies before reconciliation. After reconciliation the one remaining discrepancy was due to a death certificate with a different address than the hospital record.

The data field first course of treatment had 20 discrepancies prior to the reconciliation process and five discrepancies after. In some cases, the discrepancies were related to the biopsy not being the first course of treatment; in other cases, the biopsy actually was a lumpectomy and the first course of treatment, even though it was not stated in the pathology or operative reports.

CONCLUSION

Seventeen data items were reabstracted on the 99 breast cases for a total number of 1,683 fields reabstracted. The true number of discrepancies was very low, with a total of 36 involving eight data entry fields. Address at diagnosis disagreement was a hospital-record patient-address house-number and death-certificate house-number difference. According to NDCR policy, the demographics recorded on the death certificate are the reporting standard. Summary stage had two discrepancies related to a micro invasion of disease and documentation. Even though stage was incorrect, the behavior was coded correctly. Sequence number discrepancy was due to lack of recording in hospital record regarding a previous malignancy or information received from more than one facility. Subsite was not always recorded in the record; in some cases much investigation was necessary to find the subsite. Radiologists and surgeons have different and not always consistent ways of noting the subsite. Most of the 12 discrepancies in grading were due to no grade being recorded when one was available. The area of most discussion was diagnosis date and first course of treatment. The variation in diagnosis date seems to be related to a wording problem on the mammogram report. The following question needs to be answered: When should a mammogram procedure be used as the diagnosis date of a breast cancer? The rule is that if the mammogram wording is only suspicious, it is not the diagnosis date; but if the radiologist calls the mass suspicious for cancer or suspicious for malignancy, then the mammogram date is considered the diagnosis date. Another coding issue is first course of treatment: incisional biopsy vs. excisional biopsy and how these terms relate to non-cancer directed surgery and cancer-directed surgery codes and

dates (first course of treatment) for breast cancer. The concern is not the type of biopsy performed, but rather a decision on coding it as non-cancer directed procedure vs. cancer directed procedure, which is based on the outcome of the procedure/biopsy. The procedure coded would depend on whether there were gross or residual disease at the margins. A biopsy with margins that are grossly free of tumor would be coded as cancer-directed surgery.

The registrars at all North Dakota facilities do an excellent job of abstracting patient records. The results of this study show the level of registry quality completeness and accuracy maintained by the cancer registries in our state.

APPENDIX

North Dakota Cancer Registry personnel requested copies of medical records and reabstracted data from 99 cases chosen in a computer generated random sample. The reabstracting audit provides a discussion of results regarding the completed study. A formal reabstracting study is used to verify accuracy of data coded in the cancer registry against information in the medical record. The conclusion of this study's goal is to provide results to all registrars so that the breast reabstracting audit can be used as a learning and educational experience. The conclusions are drawn from the reconciliation of reabstracted records. The Registry Operations and Data Standards (ROADS) manual was used as a guide for coding rules, codes and definitions.

POLICY ADOPTED

Because of lessons learned in this breast reabstracting audit, the NDCR will adopt a policy to refer to when the diagnosis date of a breast cancer is debatable and also when a first course of treatment date is in question. The diagnosis date of breast cancer is when a mammogram specifically states suspicious malignancy, suspicious for cancer reference.

When the radiologist states only "suspicious mass or nodule", the date on this report is not a diagnosis date. The ROADS manual rules say that a needle core biopsy, incisional biopsy, and excisional biopsy are all first course of treatment and cancer-directed surgery: 1) **when** the margins are grossly free of tumor, 2) **when** there is only residual disease (no macroscopic tumor left at surgical site), and 3) **when** all tumor is removed.

ACKNOWLEDGEMENTS

Ann Shamdas, RHIA
Jamie Miller, CTR
Kim Sheldon, RHIT, CTR
Linda Foster, CTR
Nadine Blesener, RHIT, CTR
Tracy Pedersen, RHIT